

Messing About With *Bufo Marinus*

By R.D. Bowman

We have recently passed the 58th anniversary of what could be classed as either the most significant day in Australian history, or the remembrance of one of the greatest ecological goofs ever perpetrated by well-meaning individuals. Your perspective all depends on whether or not you like toads. To explain, let's take a trip back to the murky days of 1935, and talk a little bit about sugar.

In the early twentieth century, sugar was one of Australia's primary exports. By the mid-1930s, the depression had brought the world price of sugar down, but cane growers in Australia's Northern Queensland had other reasons to sing the blues. They were having a spot of trouble with the pesky cane grub. These "little buggers" had an insatiable hunger for the cane, camping out in its roots while it grew, and leaving vast fields of cane plants dead.

Not surprisingly, local agricultural agencies started casting about for a solution. Existing pesticides, they discovered, wouldn't touch the little fella'. But a biological means of control appeared in answer to everyone's prayers. The *Bufo Marinus*, or Hawaiian Cane Toad, had been feasting on Hawaiian cane grubs and beetles for quite some time. So one glorious day (22 June 1935, in fact), 102 individuals of the species were released into a slough just outside Gordonvale, North Queensland. And then things started to happen fast. Really fast.

No-one seemed to realize just how prolific these toads were. One would think that Australians, after all of the problems they had encountered with hares, would have a healthy respect for rapid proliferation of newly introduced species. But, instead, they just popped the cane toads in the nearest pond and waited for the grub problem to be solved.

The average female cane toad starts producing after one year of cane toad adolescence (mooning after boys, going to movies etc.). When she produces, she is capable of spreading some 40,000 or so eggs every summer (for as many as 16 years). In Hawaii, cane toads lay 40,000 eggs so that a few will survive. In Australia, however, there is a marked lack of natural predators to feast on the bounty (besides which, the toad has some rather interesting defences—but more about that later).

Australians found themselves in the middle of a population explosion of immense proportions—an "invasion" that one farmer called "more dangerous than Hitler's armies." And to add insult to injury, these toads ate everything that could fit in their mouths, from other frogs to bugs to snakes to mice and even ping pong balls if bounced in front of them. They ate everything around, EXCEPT... you guessed it, the cane grub. Apparently, the beetle of one form of the grub stays well above ground in the cane's foliage and out of the toad's reach, while

the other form of the grub only appears when the cane is without foliage, too exposed for cane toad liking.

Now, about those defences. Cane toads have little poison sacs on their shoulders that can shoot poison about a metre when pressured. So your average dog or cat grabs the toad by the neck and, for its efforts, gets a face full of poison. This has pet owners in Australia understandably a little upset. Cane toads don't carry the normal warnings that scream to predators, "Wait! Don't eat me!" (typically bright colours or a bitter taste that dissuades without killing) and native Australian toad predators are often unprepared for the unpleasant surprise that awaits.

The poison from the toads has found other uses as well. In the 1970s, there was quite a fad among the hippies of Australia which involved knocking a toad on the head, boiling him down in a pot, and drinking the residue. The result of which (not surprisingly) was intense colour hallucinations. To this day, there are rumours of individuals in the southern hemisphere catching these toads and licking their shoulders for the high.

The reaction of the Queensland population to the invaders has been wide. Many are completely in love with these amphibians, keeping them as pets and feeding them cat food. Others drive over as many as possible and enjoy the tonal "pop"—something "like a balloon going off"—that occurs if you hit them correctly (head-on, I believe).

For some, the toad has become a kind of cultural icon. The town council in Gordonvale, apparently hoping to build tourist potential and spur on postcard sales, briefly planned to erect a bust of the cane toad to commemorate its arrival. A government ministry bound a book in cane toad skin and sent it off to Buckingham Palace as a wedding gift for Charles and Di. In a celebrated incident, an Adelaide man was arrested for "impersonating a cane toad"—crouching at the side of the road and hopping on all fours out in front of oncoming cars.

Whatever the viewpoint, the cane toads pose an ecological nightmare for Australia, and a problem that has no immediate solution. These toads are in the process of destroying the Australian ecosystem and already cover more than 40% of North Queensland, rapidly moving South and West. They reproduce so quickly, eat anything and everything, kill their predators, and utilize so much of the biomass that native species are being forced out. On top of the ecological catastrophe, these creatures also cause road accidents as people skid on the vast numbers crossing the highways.

And so, as June 22 has just passed, raise your glass to *Bufo Marinus*, whether in recognition of the species' superb ability to adapt and proliferate, or as a monument to humankind's good intentions but ultimate shortsightedness. Or, best yet, to both.

